

CLAIMS LISTING

- 1.(currently amended) A process for continuously manufacturing boron nitride utilizing a graphite capsule/vessel container for a reaction mixture and utilizing a pusher-type of high-temperature furnace and comprising the steps of:
- during a preheat step: pushing the graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held at or below 1000°C. for 2 hours; and
- during a ultra-high-temperature heating step: pushing the graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held in the range of 1600 to 2200°C.
- 2.(previously presented) The process of claim 1 wherein, during the preheat step, the reaction mixture is held at or below 1000°C until about 80 weight percent of the initial starting weight is volatilized, held uniformly throughout its cross-sectional area and
- 3.(previously presented) The process of claim 1 wherein, during the ultra-high-temperature heating step, the reaction mixture is held in the range of 1600 to 2200°C until 2 weight percent of the initial starting weight is volatilized.

4.(previously presented) The process of claim 1 wherein, during the ultra-high-temperature heating step, the temperature is held in the range of 1900 to 2000°C.

5.(previously presented) The process of claim 4 wherein the time in the the ultra-high-temperature heating step is one to two hours.

6.(original) The process of claim 1 further comprising a counterflow of nitrogen such that the offgassing products are directed towards the furnace entrance, up and out into an afterburner where the noxious gases are eliminated by time and temperature.

7.(original) The process of claim 1 wherein said boron nitride is of uniform consistency of crystallinity and purity due to the uniformity of the temperature over its cross-sectional area during the preheat step and during the ultra-high-temperature step.

8.(original) The process of claim 1 wherein said boron nitride has an overall purity of over 95% boron nitride and has a uniform smooth feel, when tested by finger rubbing, when the material is selected from anywhere within the cross sectional area of the graphite capsule/vessel container.

9.(previously presented) The process of claim 1 wherein said preheat step is maintained until 80 wt% of said reacting mixture is volatilized.

- 10.(currently amended) A process for continuously manufacturing boron nitride utilizing a graphite capsule/vessel container for a reaction mixture and utilizing a pusher-type of high-temperature furnace comprising the steps of:
- pushing a graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held at or below 1000°C in a counterflow of nitrogen until about 80 weight percent of the initial starting weight is volatilized; and
- pushing the graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held in the range of 1600 to 2200°C until 80 wt% of said reaction mixture is volatilized.
- 11.(new) A process for continuously manufacturing boron nitride utilizing a graphite capsule/vessel container for a reaction mixture and utilizing a pusher-type of high-temperature furnace and comprising the steps of:
- during a preheat step: pushing the graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held at or below 1000°C. until about 80 weight percent of the initial starting weight is volatilized; and
- during a ultra-high-temperature heating step: pushing the graphite capsule/vessel through hot zones such that the reaction mixture is heated uniformly throughout its cross-sectional area and is held in the range of 1600 to 2200°C.